

REMARKS

This application has been reviewed in light of the Office Action dated January 15, 2004 (Paper No. 121703). Claims 39-76 are pending in the present application. Of these claims, independent claims 72, 75, and 76 are newly added. New claims 73-74 depend from independent claim 72. Claims 39-47 and 49-71 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,469,879 to Redon et al. (hereinafter "Redon"). Claim 48 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Redon in view of U.S. Patent No. 6,228,276 to Ju et al. Applicant respectfully traverses these rejections.

Independent claim 39 of the present application is directed to a method of fabricating a programmable resistance memory element in which data can be stored as resistance values based on the relative magnetic orientations of first and second ferromagnetic layers. Claim 39 as amended recites a method of fabricating a memory element comprising the steps of: "forming a first ferromagnetic layer having at least one side wall; forming a second ferromagnetic layer having at least one side wall; and forming a barrier layer between said first ferromagnetic layer and said second ferromagnetic layer; wherein said at least one side wall of said first ferromagnetic layer extends laterally beyond said at least one side wall of said second ferromagnetic layer; and wherein the relative magnetization directions of said first and said second ferromagnetic layers is programmable to set a resistance of said memory element." Using resistance provided by the relative magnetization directions of the first and second ferromagnetic layers to represent data stored in the memory element enables the memory element to be read, programmed, or erased.

Redon does not disclose the method of forming a programmable resistance memory element recited in claim 39. Rather, Redon discloses making a "magneto-resistive tunnel junction head" or "TMR head." See Redon, col. 5, lines 19-22. The

described TMR head "read[s] the magnetic field intensity from a magnetic recording medium." See id., col. 1, lines 9-11. The head disclosed in Redon is used in a magnetic disk drive for reading magnetic disks. This has little applicability to the claimed invention. Redon clearly does not describe or suggest a method for making a memory element wherein the resistance provided by the relative magnetization directions of the first and second ferromagnetic layers represents data stored in the memory element.

With respect to claim 48, Ju et al does not cure the above noted deficiencies in Redon. Ju et al is directed to a magnetoresistive sense element and not to a programmable resistance memory element.

New independent claims 72, 75, and 76 recite the limitations contained in claim 39, plus additional limitations, and are therefore allowable for at least the reasons set forth above. Claims 73-74 depend from claim 72 and are therefore also allowable.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Respectfully submitted,

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